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**WHAT IS CLAIMED IS:**

1        1. In a wireless telecommunications system having a  
2 Base Transceiver Station (BTS) and a mobile terminal equipped  
3 with a Global Positioning System (GPS) equipped receiver, the  
4 Base Transceiver Station having operational control of the  
5 GPS-equipped mobile terminal, a method for determining the  
6 approximate position of the GPS-equipped mobile terminal,  
7 said method comprising the steps of:

8              demodulating signals received from a multiplicity  
9 of GPS satellites at a reference GPS receiver, said reference  
10 GPS receiver being connected to the wireless  
11 telecommunications system and having a determinate physical  
12 location relative to the Base Transceiver Station;

13              recovering respective navigational data signals  
14 from each of said demodulated GPS signals;

15              originating a request for approximate navigational  
16 information from the GPS-equipped mobile terminal to the Base  
17 Transceiver Station;

18              transmitting recovered navigational data signals  
19 to the GPS-equipped mobile terminal responsive to said  
20 request for approximate navigational information; and

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21               determining, from said transmitted navigational  
22        data signals, the approximate location of the GPS-equipped  
23        mobile terminal.

1               2. The method according to Claim 1, wherein said  
2        signals from the GPS satellites are Standard Positioning  
3        Service (SPS) signals received on an L1 frequency, said L1  
4        frequency being centered at about 1575.42 MHz.

1               3. The method according to Claim 1, wherein said  
2        signals from the GPS satellites are Precise Positioning  
3        Service (PPS) signals received on an L2 frequency, said L2  
4        frequency being centered at about 1227.60 MHz.

1               4. The method according to Claim 1, wherein said  
2        approximate navigational information comprises the identities  
3        of a plurality of GPS satellites within ranging distance, the  
4        orbital parameters associated with said plurality of GPS  
5        satellites, clock correction information and differential  
6        correction information associated with said plurality of GPS  
7        satellites.

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1       5. The method according to Claim 1, wherein said step  
2 of originating said request for approximate locational  
3 information from the GPS-equipped mobile terminal to the Base  
4 Transceiver Station is responsive to activation of the mobile  
5 terminal.

1       6. The method according to Claim 1, wherein said step  
2 of originating said request for approximate locational  
3 information from the GPS-equipped mobile terminal to the Base  
4 Transceiver Station is responsive to placing a call from the  
5 GPS-equipped mobile terminal to one of a set of designated  
6 numbers.

1       7. The method according to Claim 6, wherein said one  
2 designated number is associated with an emergency service.

1       8. The method according to Claim 1, wherein said step  
2 of originating said request for approximate locational  
3 information from the GPS-equipped mobile terminal to the Base  
4 Transceiver Station is responsive to a determination by the  
5 reference GPS receiver that the GPS signal strength at the  
6 GPS-equipped mobile terminal is inadequate to permit

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7 initialization of the reference GPS receiver associated with  
8 the GPS-equipped mobile terminal within a desired response  
9 time.

*SUB C1*

1       9. The method according to Claim 1, wherein said step  
2 of transmitting is performed as a Cell Broadcast (CB) Short  
3 Message Service (SMS) message of the wireless  
4 telecommunications system.

1       10. The method according to Claim 1, wherein said step  
2 of transmitting is performed over a Broadcast Control Channel  
3 (BCCH) of the wireless telecommunications system.

*SUB C3*

1       11. The method according to Claim 1, further comprising  
2 the step of:

3              periodically transmitting a Timing Advance  
4 parameter from the Base Transceiver Station to the GPS-  
5 equipped mobile terminal to dynamically compensate for  
6 varying distances between the GPS-equipped mobile terminal  
7 and the Base Transceiver Station.

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1           12. The method according to Claim 11, further  
2           comprising the step of:

3                 refining said approximate location of the GPS-  
4           equipped mobile terminal using said Timing Advance parameter.

1           13. In a wireless telecommunications system having a  
2           Base Transceiver Station and a mobile terminal equipped with  
3           a Global Positioning System (GPS) receiver, the Base  
4           Transceiver Station having operational control of the GPS-  
5           equipped mobile terminal, a method for determining the  
6           approximate position of the GPS-equipped mobile terminal,  
7           said method comprising the steps of:

8                 demodulating signals received from a multiplicity  
9           of GPS satellites at a reference GPS receiver, said reference  
10          GPS receiver being connected to the wireless  
11          telecommunications system and having a determinate physical  
12          location relative to the Base Transceiver Station;

13                 computing an estimated location of said reference  
14          GPS receiver using said demodulated signals from said GPS  
15          satellites;

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16           originating a request for approximate locational  
17   information from the GPS-equipped mobile terminal to the Base  
18   Transceiver Station;

19           transmitting said estimated location of said  
20   reference GPS receiver from the Base Transceiver Station to  
21   the GPS-equipped mobile terminal responsive to said request  
22   for approximate locational information; and

23           determining, from said transmitted location of said  
24   reference GPS receiver, the approximate location of the GPS-  
25   equipped mobile terminal.

1           14. The method according to Claim 13, wherein said step  
2   of computing the estimated location of said reference GPS  
3   receiver further comprises the steps of:

4           recovering respective navigational data signals  
5   from each of said demodulated GPS signals from said GPS  
6   satellites; and

7           computing, from the respective navigational data  
8   signals, the location of said reference GPS receiver.

1           15. The method according to Claim 14, wherein said  
2   respective navigational data signals comprise orbital

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3       parameters associated with a plurality of GPS satellites,  
4       clock correction information and differential correction  
5       information.

1           16. The method according to Claim 13, wherein said  
2       method further comprises, after said step of computing and  
3       before said step of originating, the step of:

4                 storing said estimated location of said reference  
5       GPS receiver in said wireless telecommunications system.

1           17. The method according to Claim 13, wherein said step  
2       of originating said request for approximate locational  
3       information from the GPS-equipped mobile terminal to the Base  
4       Transceiver Station is responsive to activation of the GPS-  
5       equipped mobile terminal.

1           18. The method according to Claim 13, wherein said step  
2       of originating said request for approximate locational  
3       information from the GPS-equipped mobile terminal to the Base  
4       Transceiver Station is responsive to placing a call from the  
5       GPS-equipped mobile terminal to one of a set of designated  
6       numbers.

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1        19. The method according to Claim 18, wherein said one  
2 designated number is associated with an emergency service.

1        20. The method according to Claim 13, wherein said step  
2 of originating said request for approximate locational  
3 information from the GPS-equipped mobile terminal to the Base  
4 Transceiver Station is responsive to a determination by the  
5 reference GPS receiver that GPS signal strength at the GPS-  
6 equipped mobile terminal is inadequate to permit  
7 initialization of the reference GPS receiver associated with  
8 the GPS-equipped mobile terminal within a desired response  
9 time.

1        21. The method according to Claim 13, wherein said step  
2 of transmitting is performed as a Cell Broadcast (CB) Short  
3 Message Service (SMS) message over the wireless  
4 telecommunications system.

1        22. The method according to Claim 13, wherein said step  
2 of transmitting is performed over a Broadcast Control Channel  
3 (BCCH) of the wireless telecommunications system.

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1        23. The method according to Claim 13, wherein the  
2 estimated location of said reference GPS receiver is used as  
3 the approximate location of the GPS-equipped mobile terminal.

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1        24. In a wireless telecommunications system having a  
2 Base Transceiver Station and a mobile terminal equipped with  
3 a Global Positioning System (GPS) receiver, the Base  
4 Transceiver Station having operational control of the GPS-  
5 equipped mobile terminal, a system for determining the  
6 approximate position of the GPS-equipped mobile terminal,  
7 said system comprising:

8              demodulation means for demodulating signals  
9 received from a multiplicity of GPS satellites at a reference  
10 GPS receiver, said reference GPS receiver being connected to  
11 the wireless telecommunications system and having a  
12 determinate physical location relative to the Base  
13 Transceiver Station;

14              signal recovery means for recovering navigational  
15 data signals from each of said demodulated signals from said  
16 GPS satellites;

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17                   requesting means for requesting approximate  
18                   navigational information for the GPS-equipped mobile terminal  
19                   from the Base Transceiver Station;

20                   transmission means for transmitting said recovered  
21                   navigational data signals to the GPS-equipped mobile terminal  
22                   responsive to said request for approximate navigational  
23                   information; and

24                   determination means for determining, from said  
25                   transmitted navigational data signals to determine the  
26                   approximate location of the GPS-equipped mobile terminal.

1                 25. The system according to Claim 24, wherein said  
2                 signals from the GPS satellites are Standard Positioning  
3                 Service (SPS) signals received on an L1 frequency, said L1  
4                 frequency being centered at about 1575.42 MHz.

1                 26. The system according to Claim 24, wherein said  
2                 signals from the GPS satellites are Precise Positioning  
3                 Service (PPS) signals received on an L2 frequency, said L2  
4                 frequency being centered at about 1227.60 MHz.

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1        27. The system according to Claim 24, wherein said  
2        approximate navigational information comprises the identities  
3        of a plurality of GPS satellites within ranging distance, the  
4        orbital parameters associated with said plurality of GPS  
5        satellites, clock correction information and differential  
6        correction information associated with said plurality of GPS  
7        satellites.

1        28. The system according to Claim 24, wherein said  
2        requesting means is responsive to activation of the mobile  
3        terminal.

1        29. The system according to Claim 24, wherein said  
2        requesting means is responsive to placing a call from the  
3        GPS-equipped mobile terminal to one of a set of designated  
4        numbers.

1        30. The system according to Claim 24, wherein said one  
2        designated number is associated with an emergency service.

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Subj  
3        31. The system according to Claim 24, wherein said  
4        requesting means is responsive to a determination by the  
5        reference GPS receiver that GPS signal strength at the GPS-  
6        equipped mobile terminal is inadequate to permit the  
7        initialization of the reference GPS receiver associated with  
8        the GPS-equipped mobile terminal within a desired response  
9        time.

Subj  
1        32. The system according to Claim 24, wherein said  
2        transmission means comprises a Cell Broadcast (CB) Short  
3        Message Service (SMS) message over the wireless  
4        telecommunications system.

Subj  
1        33. The system according to Claim 24, wherein said  
2        transmission means comprises a Broadcast Control Channel  
3        (BCCH) of the wireless telecommunications system.

Subj  
1        34. The system according to Claim 24, further  
2        comprising:

3              means for periodically transmitting a Timing  
4        Advance parameter from the Base Transceiver Station to the  
5        GPS-equipped mobile terminal to dynamically compensate for

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6 varying distances between the GPS-equipped mobile terminal  
7 and the Base Transceiver Station.

1           35. The system according to Claim 34, further  
2 comprising:

3           means for refining said approximate location of the  
4 GPS-equipped mobile terminal using said Timing Advance  
5 parameter.

1           36. In a wireless telecommunications system having a  
2 Base Transceiver Station and a mobile terminal equipped with  
3 a Global Positioning System (GPS) receiver, the Base  
4 Transceiver Station having operational control of the GPS-  
5 equipped mobile terminal, a system for determining the  
6 approximate position of the GPS-equipped mobile terminal,  
7 said system comprising:

8           a demodulator for demodulating signals received  
9 from a multiplicity of GPS satellites at a reference GPS  
10 receiver, said reference GPS receiver being connected to the  
11 wireless telecommunications system and having a determinate  
12 physical location relative to the Base Transceiver Station;

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13                   computing means for determining an estimated  
14                   location of said reference GPS receiver using said  
15                   demodulated signals from said GPS satellites;  
16                   requesting means for requesting approximate  
17                   locational information from the GPS-equipped mobile terminal  
18                   to the Base Transceiver Station;  
19                   a transmitter for transmitting the location of said  
20                   reference GPS receiver from the Base Transceiver Station to  
21                   the GPS-equipped mobile terminal responsive to said request  
22                   for said approximate locational information; and  
23                   determination means for determining the approximate  
24                   location of the GPS-equipped mobile terminal using said  
25                   transmitted location of said reference GPS receiver.

1                   37. The system according to Claim 36, wherein said  
2                   computing means further comprises:

3                   decoder means for recovering respective  
4                   navigational data signals from each of said demodulated  
5                   signals from said GPS satellites; and  
6                   computing means for computing the location of said  
7                   reference GPS receiver from said respective navigational data  
8                   signals.

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1       38. The system according to Claim 37, wherein said  
2       respective navigational data signals comprise the orbital  
3       parameters associated with a plurality of GPS satellites,  
4       clock correction information and differential correction  
5       information.

1       39. The system according to Claim 36, wherein said  
2       computing means further comprises:

3               storage means for storing said estimated location  
4       of said reference GPS receiver in said wireless  
5       telecommunications system.

1       40. The system according to Claim 36, wherein said  
2       requesting means is responsive to activation of the mobile  
3       terminal.

1       41. The system according to Claim 36, wherein said  
2       requesting means is responsive to placing a call from the  
3       GPS-equipped mobile terminal to one of a set of designated  
4       numbers.

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1       42. The system according to Claim 41, wherein said one  
2 designated number is associated with an emergency service.

1       43. The system according to Claim 36, wherein said  
2 requesting means is responsive to a determination by the  
3 reference GPS receiver that GPS signal strength at the GPS-  
4 equipped mobile terminal is inadequate to permit  
5 initialization of the reference GPS receiver associated with  
6 the GPS-equipped mobile terminal within a desired response  
7 time.

1       44. The system according to Claim 36, wherein said  
2 transmitter transmits a Cell Broadcast (CB) Short Message  
3 Service (SMS) message over the wireless telecommunications  
4 system.

1       45. The system according to Claim 36, wherein said  
2 transmitter transmits over a Broadcast Control Channel (BCCH)  
3 of the wireless telecommunications system.

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1        46. The system according to Claim 36, wherein the  
2        estimated location of said reference GPS receiver is used as  
3        the approximate location of the GPS-equipped mobile terminal.

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